

## ABSTRACT

A turbo encoder has a configuration provided with rearrangement unit which generates  $N$  types of random series by arranging random series generated by using prime numbers in a buffer of  $N$  (where  $N$  is a natural number) rows  $\times$   $M$  (where  $M$  is a natural number) columns and rearranging bits in rows by using the random series, generating a final rearrangement pattern by mapping interleaver-length data series on the rearranged  $N$  types of random series, and replacing rows in the mapped data series in accordance with a predetermined rule, and finally reading the generated rearrangement pattern in columns.